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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/673,376	09/30/2003	John A. Hughes	240720US6YA	4362
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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER ARANCIBIA, MAUREEN GRAMAGLIA	
			ART UNIT 1763	PAPER NUMBER
			NOTIFICATION DATE 09/05/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary

Application No.

10/673,376

Applicant(s)

HUGHES ET AL.

Examiner

Maureen G. Arancibia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) 2,4-10,12-17,19,21 and 23-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,11,18, 20 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 1, 3, and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Specifically, it is unclear if Claim 1 is intended to recite the subcombination of the processing element alone (the preamble recites "a processing element *for* a semiconductor manufacturing system") or the combination of the processing element and the semiconductor manufacturing system (Lines 2 and 3 of the claim recite "a passive component *disposed...in* the semiconductor manufacturing system"). Examiner notes Applicant's amendment to Claim 1. However, the claim language remains unclear as to whether the subcombination of the processing element alone or the combination of the processing element and the semiconductor manufacturing system is being claimed. For the purposes of the following examination on the merits, the claim has been interpreted as referring to the subcombination of the processing element alone. Claims 3 and 11 are rejected due to their dependence on Claim 1. Clarification and/or correction are required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 3, and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 7,227,097 to Kumar et al.

In regards to Claim 1, Kumar et al. teaches a processing element for a plasma processing system (Column 3, Lines 18-20), comprising: a passive polymeric component (*a passive plasma catalyst...capable of inducing a plasma by deforming a local electric field*, Column 9, Lines 2-11, which can be *an electrically conductive polymer or a polymer nanocomposite*, Column 10, Lines 3-8) that can have various shapes (Column 10, Lines 50-53) and is configured to erode when exposed to a plasma process in the plasma processing system (it is *consumed by the plasma*; ex. Column 11, Lines 37-43); and an active component included as a part of said passive component and configured to alter the chemistry of the processing when exposed to the plasma process (*an additive [that] can include any material that a user wishes to add to the plasma, such as a dopant or a precursor material that, upon decomposition, can form the dopant*; Column 11, Lines 1-17).

Kumar et al. further teaches that the plasma processing system can be used for semiconductor manufacture. (ex. *doping semiconductors*; Column 11, Lines 6-8)

In regards to Claims 3 and 11, Kumar et al. teaches that the active component can comprise a distribution of solid particles (*the additive*) encapsulated within the passive component (*the passive plasma catalyst*). (Column 11, Lines 1-54; Figure 3)

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 18, 20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumar et al. in view of U.S. Patent 6,071,573 to Koemtzopoulos et al.**

The teachings of Kumar et al. were discussed above.

Kumar et al. further teaches that the processing element discussed in regards to Claim 1 can be positioned within a plasma processing system (Figure 6), which can be used for semiconductor manufacture (Column 11, Lines 6-8) and comprises: a processing chamber 165 configured to facilitate a plasma process; a gas distribution system (*gas port*, Figure 6) coupled to the processing chamber and configured to introduce a process gas to the processing chamber (see for example Column 5, Lines 3-6; Column 9, Lines 2-5); a plasma source (*a radiation source, such as a microwave source*, supplying electromagnetic radiation to a *radiation chamber* in which the processing chamber is placed to generated a plasma; see for example Figures 1 and 2; Column 1, Line 44 - Column 2, Line 37; Column 3, Lines 18-58; Column 9, Lines 1-11 and 35-55; Column 12, Lines 29-40) coupled to the processing chamber 165 due to the processing chamber being installed in radiation chamber 160 and configured to generated a plasma in the processing chamber; and the processing element itself as

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discussed in regards to Claim 1 (indicated at 170 in Figure 6), which may be considered to be coupled to the processing chamber 165 by being positioned within it (Figure 6), and to be *electromagnetically* coupled to the plasma source (Column 9, Lines 1-11 and Column 12, Lines 29-40), as broadly recited in the claim.

Kumar et al. does not expressly teach a substrate holder coupled to the processing chamber and configured to support a substrate to be processed.

Koemtzopoulos et al. teaches a substrate holder 7 coupled to a plasma processing chamber 2 and configured to support a substrate 6 to be processed, for the purpose of exposing a substrate 6 such as a semiconductor wafer to a plasma process while allowing for the support and temperature control of the substrate during processing. (Figure 1; Column 4, Lines 15-45)

It would have been obvious to one of ordinary skill in the art to modify the apparatus taught by Kumar et al. to couple a substrate holder to the processing chamber, said substrate holder being configured to support a substrate to be processed, in order, as taught by Koemtzopoulos et al. (Figure 1; Column 4, Lines 15-45), to expose a substrate such as a semiconductor wafer to a plasma process while allowing for the support and temperature control of the substrate during processing.

In regards to Claims 20 and 22, see the discussion of Claims 3 and 11 above.

Response to Arguments

7. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection, which was necessitated by the amendment to the claims.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maureen G. Arancibia whose telephone number is (571) 272-1219. The examiner can normally be reached on core hours of 10-5, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Maureen G. Arancibia
Patent Examiner
Art Unit 1763



Parviz Hassanzadeh
Supervisory Patent Examiner
Art Unit 1763